

04/30/14 Agenda:

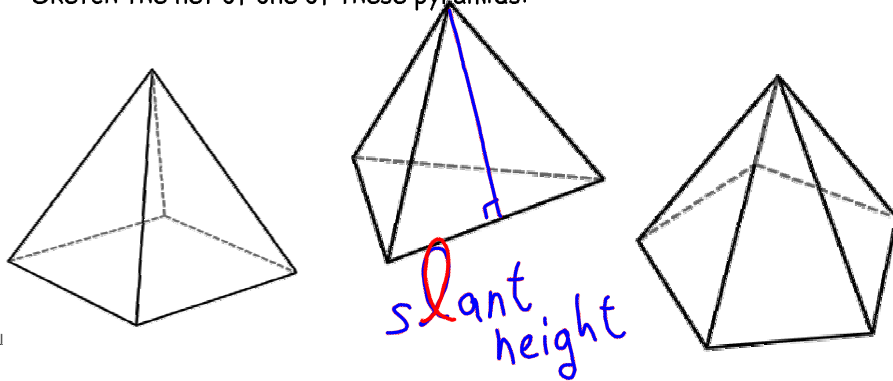
- Check in NGA review P1 & P2 (p2 & p6)
- Section 12.3 - Surface Area of Pyramids
- Homework
 - Worksheet 5 - Surface Area of Pyramids

Unit 11 Day 5 - Surface Area of Pyramids
Target 11C

April 30, 2014

How would finding the SA of a pyramid be different from that of a prism?

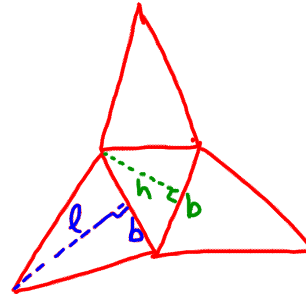
Sketch the net of one of these pyramids:



What is the shape of the base? TRIANGLE

What is the formula for the area of the base?

$$A_{\Delta} = \frac{1}{2}bh = B$$



What is the shape of each side? TRIANGLE

How many are there? THE SAME NUMBER AS THE NUMBER OF SIDES OF THE BASE

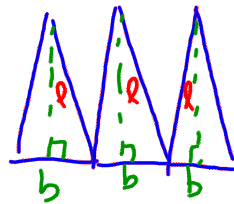
What is the formula for the area of each side?

$$A_{\Delta} = \frac{1}{2}bh \quad \text{slant height}$$

How would you find the surface area of the pyramid?

$$A_{\text{FACE}} = \frac{1}{2}b\ell$$

$$B + LA$$



$$= \frac{1}{2}b\ell + \frac{1}{2}b\ell + \frac{1}{2}b\ell$$

PERIMETER OF BASE

$$SA_{\text{PYRAMID}} = B + \frac{1}{2}P\ell$$

$$LA = \frac{1}{2}P\ell$$

ℓ - SLANT HEIGHT

Unit 11 Day 5 - Surface Area of Pyramids

Target 11C

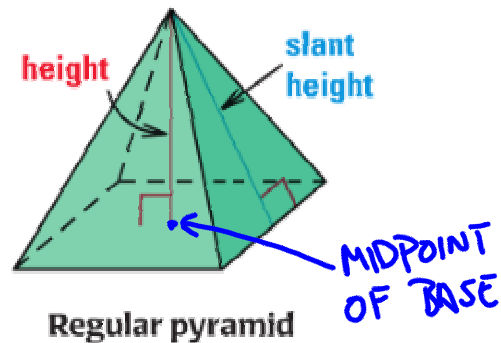
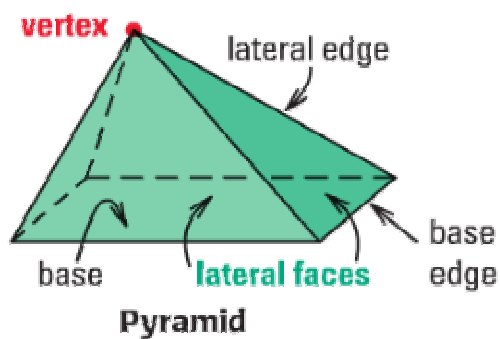
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Definitions:

Pyramid: A polyhedron in which the base is a polygon and the lateral faces are triangles with a common vertex, called the **vertex of the pyramid**.

Regular Pyramid: A pyramid with a regular polygon for the base and congruent isosceles triangles for the lateral faces.

Slant Height: The height of a lateral face of a regular pyramid.

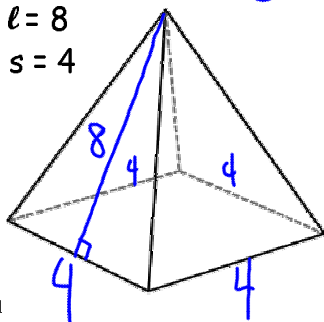


Unit 11 Day 5 - Surface Area of Pyramids
Target 11C

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Calculate the Surface Area of each pyramid:

$l = 8$
 $s = 4$



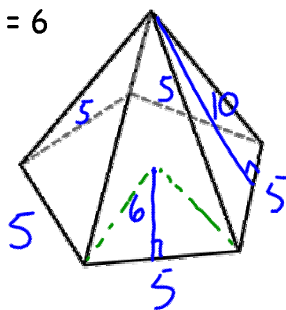
$$SA = B + \frac{1}{2}Pl$$

Base: $= s \cdot s = s^2 = 16u^2$
 $4 \cdot 4$

LA: $= \frac{1}{2}Pl = \frac{1}{2} \cdot 16 \cdot 8 = 64u^2$

SA: $= B + LA = 80u^2$

$l = 10$
 $s = 5$
 $a = 6$



$$A_{\text{REG Poly}} = \frac{1}{2}a \cdot P$$

Base: $= \frac{1}{2} \cdot 6 \cdot 25 = 75u^2$

LA: $= \frac{1}{2}Pl = \frac{1}{2} \cdot 10 \cdot 25 = 125u^2$

SA: $= B + LA = 200u^2$

$SA_{\text{PYRAMID}} = B + \frac{1}{2}P \cdot l$

PERIMETER OF BASE \downarrow
SCANT HEIGHT \uparrow
AREA OF BASE \downarrow

$l^2 = 12^2 + 5^2$
 $l^2 = 144 + 25$
 $l^2 = 169$
 $l = 13$

Base: $= s^2 = 10 \cdot 10 = 100yd^2$

LA: $= \frac{1}{2}Pl = \frac{1}{2} \cdot 40 \cdot 13 = 260yd^2$

SA: $= B + LA = 360yd^2$